# New England Agricultural Statistics Service

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*United States Department of Agriculture*

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# Maine Potatoes
# Agricultural Chemical Usage, 1999

***May 19, 2000***

***A special "THANK YOU" goes to Maine potato growers who have helped us by reporting fertilizer and pesticide application data in the Potato Production Practices Report in the Agricultural Resource Management Study. In Maine, data was collected in October and November of 1999.***

## FERTILIZER AND PESTICIDES APPLIED TO FALL SEASON POTATOES IN 1999

The agricultural chemical use estimates in this report refer to on-farm use of commercial fertilizers and pesticides on targeted crops for the 1999 crop year. Farm and ranch operators were enumerated late in the growing season or after the farm operator had indicated that planned applications were completed. The data were compiled from the Agricultural Resources Management Study (ARMS), conducted primarily during the months of October-December of 1999.

Targeted crops in the 1999 ARMS include corn, upland cotton, fall potatoes, soybeans, peanuts, and sunflowers. Winter wheat was a target commodity for Indiana only.

Eleven fall potato producing States were included in the 1999 survey: The number of usable reports for each state were: Colorado (89), Idaho (342), Indiana (23), Maine (202), Michigan (101), Minnesota (63), North Dakota (49), Oregon (104), Pennsylvania (131), Washington (126), and Wisconsin (92).

Nitrogen fertilizer was applied to 100 percent of the fall potato acreage in all States, except in Colorado, Minnesota, North Dakota, and Pennsylvania. The number of nitrogen applications averaged 3.8 per acre with a total of 243.2 million pounds applied. Phosphate was applied to 98 percent of the acres in the States surveyed with a total of 190.1 million pounds being applied. Potash was applied to 88 percent of the fall potato acreage. About 163.6 million pounds of potash were applied in total.

Herbicides were applied to 93 percent of the potato acreage in 1999 in the 11 States surveyed. Coverage ranged from 100 percent in Maine, Michigan, and Oregon to 67 percent of the crop receiving herbicides in Indiana. Metribuzin was the most widely applied active ingredient and was used on 73 percent of the total acreage while EPTC was applied to 26 percent of the planted acres. Pendimethalin and Rimsulfuron were applied to 20 and 15 percent of the planted acres, respectively.

Insecticides were applied to 93 percent of the 1999 fall potato acreage. Usage ranged from treatment on 100 percent of the acres in Michigan and Wisconsin to 76 percent of the acres in Colorado. The three most common active ingredients were Imidacloprid, Methamidophos, and Phorate which were applied to 34, 29, and 23 percent of the fall potato acreage, respectively.

Fungicide treatments were applied to 95 percent of the fall potato acreage. Maine treated 100 percent of the acreage, followed closely by Michigan and North Dakota with 99 percent each. Chlorothalonil was used the most, as it was applied on 72 percent of the acreage, followed by Mancozeb on 65 percent of the fall potato acreage.

Usage of other chemicals, primarily desiccants, varied widely among the 11 States with an average of 45 percent of the fall potato acreage being treated. Diquat was the most commonly used active ingredient in the States surveyed and was applied to 38 percent of the planted area.

The use of trade names in this report is for information only and should not be construed as a recommendation by NASS.

*This report is taken from the national **Agricultural Chemical Usage 1999 Field Crops Summary** report published by USDA's National Agricultural Statistics Service at 3 pm on May 17, 2000. The full report (about 115 pages) includes the 1999 farm use of fertilizers and pesticides applied to corn, upland cotton, fall potatoes, soybeans, peanuts, sunflowers and winter wheat*

*The information printed here features statistics for Maine and shows an overview of agricultural chemicals applied to fall potatoes in major potato-producing states. The full report also shows each of the other states individually in addition to Maine.*

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**Fall Potatoes: Fertilizer Use, Total Acreage, Percent of Acres Treated and Total Amount Applied, Eleven States Surveyed and Total, 1999**

| State | Planted Acreage | Percent of Acres Treated and Total Applied | | | | | |
|---|---|---|---|---|---|---|---|
| | | Nitrogen | | Phosphate | | Potash | |
| | 1,000 Acres | Percent | Mil. | Percent | Mil. | Percent | Mil. |
| CO | 77.2 | 98 | 14.6 | 95 | 13.3 | 74 | 5.6 |
| ID | 395 | 100 | 91.0 | 99 | 78.5 | 82 | 42.7 |
| IN | 5.2 | 100 | 0.6 | 100 | 0.5 | 100 | 0.5 |
| ME | 65 | 100 | 11.5 | 100 | 12.3 | 100 | 12.4 |
| MI | 48 | 100 | 10.1 | 98 | 6.6 | 100 | 10.0 |
| MN | 70 | 99 | 8.0 | 91 | 5.3 | 91 | 9.6 |
| ND | 121 | 99 | 15.4 | 98 | 10.9 | 83 | 9.2 |
| OR | 56 | 100 | 13.5 | 100 | 8.2 | 91 | 7.5 |
| PA | 14.5 | 97 | 2.2 | 97 | 1.8 | 97 | 2.0 |
| WA | 170 | 100 | 55.5 | 99 | 40.7 | 97 | 43.7 |
| WI | 86 | 100 | 20.8 | 100 | 12.0 | 99 | 20.4 |
| Total | 1,107.9 | 100 | 243.2 | 98 | 190.1 | 88 | 163.6 |

**Fall Potatoes: Fertilizer Primary Nutrient Applications, Eleven States Surveyed and Total, 1999**

| Primary Nutrient | Planted Acreage | Area Applied | Applications | Rate per Application | Rate per Crop Year | Total Applied |
|---|---|---|---|---|---|---|
| | 1,000 Acres | Percent | Number | Pounds per Acre | | Mil. Lbs |
| Colorado: | 77.2 | | | | | |
| Nitrogen | | 98 | 6.2 | 31 | 194 | 14.6 |
| Phosphate | | 95 | 1.3 | 132 | 183 | 13.3 |
| Potash | | 74 | 1.7 | 56 | 99 | 5.6 |
| Idaho: | 395 | | | | | |
| Nitrogen | | 100 | 4.5 | 51 | 231 | 91.0 |
| Phosphate | | 99 | 2.3 | 86 | 200 | 78.5 |
| Potash | | 82 | 1.6 | 79 | 131 | 42.7 |
| Indiana: | 5.2 | | | | | |
| Nitrogen | | 100 | 1.7 | 68 | 121 | 0.6 |
| Phosphate | | 100 | 1.0 | 103 | 104 | 0.5 |
| Potash | | 100 | 1.0 | 95 | 97 | 0.5 |
| Maine: | 65 | | | | | |
| Nitrogen | | 100 | 1.1 | 153 | 177 | 11.5 |
| Phosphate | | 100 | 1.0 | 176 | 189 | 12.3 |
| Potash | | 100 | 1.0 | 180 | 191 | 12.4 |
| Michigan: | 48 | | | | | |
| Nitrogen | | 100 | 3.8 | 55 | 211 | 10.1 |
| Phosphate | | 98 | 1.1 | 120 | 140 | 6.6 |
| Potash | | 100 | 1.3 | 152 | 210 | 10.0 |
| Minnesota: | 70 | | | | | |
| Nitrogen | | 99 | 2.1 | 53 | 115 | 8.0 |
| Phosphate | | 91 | 1.1 | 74 | 84 | 5.3 |
| Potash | | 91 | 1.2 | 126 | 152 | 9.6 |
| North Dakota: | 121 | | | | | |
| Nitrogen | | 99 | 3.4 | 37 | 129 | 15.4 |
| Phosphate | | 98 | 1.2 | 75 | 91 | 10.9 |
| Potash | | 83 | 1.2 | 73 | 92 | 9.2 |
| Oregon: | 56 | | | | | |
| Nitrogen | | 100 | 2.4 | 99 | 242 | 13.5 |
| Phosphate | | 100 | 1.6 | 89 | 147 | 8.2 |
| Potash | | 91 | 1.4 | 100 | 147 | 7.5 |
| Pennsylvania: | 14.5 | | | | | |
| Nitrogen | | 97 | 1.6 | 92 | 155 | 2.2 |
| Phosphate | | 97 | 1.1 | 104 | 124 | 1.8 |
| Potash | | 97 | 1.2 | 113 | 141 | 2.0 |
| Washington: | 170 | | | | | |
| Nitrogen | | 100 | 3.6 | 89 | 327 | 55.5 |
| Phosphate | | 99 | 1.6 | 142 | 242 | 40.7 |
| Potash | | 97 | 1.3 | 194 | 264 | 43.7 |
| Wisconsin: | 86 | | | | | |
| Nitrogen | | 100 | 4.4 | 54 | 243 | 20.8 |
| Phosphate | | 100 | 1.5 | 90 | 140 | 12.0 |
| Potash | | 99 | 2.5 | 95 | 239 | 20.4 |
| Total: | 1,107.9 | | | | | |
| Nitrogen | | 100 | 3.8 | 57 | 220 | 243.2 |
| Phosphate | | 98 | 1.7 | 101 | 174 | 190.1 |
| Potash | | 88 | 1.5 | 108 | 166 | 163.6 |

**Fall Potatoes: Agricultural Chemical Applications, Eleven States Surveyed, 1999 1/**

| Agricultural Chemical | Area Applied | Applications | Rate per Application | Rate per Crop Year | Total Applied |
|---|---|---|---|---|---|
| | Percent | Number | Pounds per Acre | | 1,000 lbs |
| Herbicides: | | | | | |
| 2,4-D | 2 | 1.9 | 0.06 | 0.12 | 1 |
| EPTC | 26 | 1.0 | 3.48 | 3.69 | 1,077 |
| Glyphosate | 3 | 1.0 | 0.65 | 0.65 | 20 |
| Linuron | 5 | 1.0 | 0.63 | 0.63 | 35 |
| Metolachlor | 16 | 1.0 | 1.75 | 1.76 | 315 |
| Metribuzin | 73 | 1.0 | 0.42 | 0.45 | 366 |
| Pendimethalin | 20 | 1.0 | 0.80 | 0.81 | 178 |
| Rimsulfuron | 15 | 1.0 | 0.02 | 0.02 | 2 |
| Sethoxydim | 3 | 1.0 | 0.29 | 0.29 | 9 |
| Trifluralin | 8 | 1.0 | 0.51 | 0.51 | 43 |
| Insecticides: | | | | | |
| Aldicarb | 5 | 1.0 | 2.65 | 2.72 | 141 |
| Azinphos-methyl | 7 | 1.1 | 0.42 | 0.48 | 38 |
| Bt (Bacillus thur.)2/ | * | 1.6 | | | |
| Carbaryl | 3 | 1.2 | 0.85 | 1.02 | 30 |
| Carbofuran | 10 | 1.2 | 1.44 | 1.85 | 204 |
| Cyfluthrin | 3 | 1.3 | 0.03 | 0.04 | ** |
| Diazinon | 2 | 1.1 | 1.43 | 1.71 | 31 |
| Dimethoate | 13 | 1.7 | 0.38 | 0.68 | 100 |
| Disulfoton | 1 | 1.1 | 1.31 | 1.49 | 19 |
| Ethoprop | 8 | 1.0 | 3.83 | 3.88 | 331 |
| Endosulfan | 16 | 1.4 | 0.85 | 1.21 | 221 |
| Esfenvalerate | 16 | 1.4 | 0.04 | 0.05 | 9 |
| Fonofos | 1 | 1.3 | 1.68 | 2.35 | 30 |
| Imidacloprid | 34 | 1.2 | 0.12 | 0.15 | 55 |
| Lambda-cyhalothrin | * | 1.6 | 0.21 | 0.34 | ** |
| Malathion | * | 1.0 | 0.66 | 0.66 | 2 |
| Methamidophos | 29 | 1.7 | 0.91 | 1.61 | 520 |
| Methomyl | * | 1.5 | 0.33 | 0.51 | ** |
| Methyl parathion | 1 | 1.7 | 0.57 | 0.97 | 12 |
| Oxamyl | 2 | 1.2 | 0.62 | 0.76 | 13 |
| Permethrin | 8 | 1.3 | 0.13 | 0.17 | 15 |
| Phorate | 23 | 1.0 | 2.74 | 2.75 | 691 |
| Phosmet | 4 | 1.2 | 0.65 | 0.81 | 32 |
| Piperonyl butoxide | 2 | 1.9 | 0.43 | 0.82 | 22 |
| Propargite | 4 | 1.1 | 1.64 | 1.92 | 76 |
| Pyrethrins | * | 1.6 | 0.04 | 0.06 | ** |
| Spinosad | 3 | 1.0 | 0.05 | 0.05 | 2 |
| Fungicides: | | | | | |
| Azoxystrobin | 24 | 2.5 | 0.10 | 0.26 | 69 |
| Chlorothalonil | 72 | 4.0 | 0.93 | 3.73 | 2,960 |
| Copper ammonium | 2 | 1.9 | 0.33 | 0.65 | 16 |
| Copper hydroxide | 13 | 1.6 | 0.56 | 0.94 | 134 |
| Copper sulfate | 2 | 1.0 | 1.10 | 1.14 | 25 |
| Cymoxanil | 13 | 1.7 | 0.11 | 0.20 | 29 |
| Dimethomorph | 1 | 1.3 | 0.18 | 0.23 | 3 |
| Iprodione | 7 | 1.0 | 0.97 | 1.05 | 87 |
| Mancozeb | 65 | 3.1 | 1.21 | 3.86 | 2,775 |
| Maneb | 5 | 2.5 | 1.23 | 3.19 | 190 |
| Mefenoxam | 20 | 1.5 | 0.11 | 0.17 | 37 |
| Metalaxyl | 12 | 1.4 | 0.22 | 0.31 | 40 |
| Metiram | 12 | 2.6 | 1.46 | 3.83 | 529 |
| Propamocarb hydroch. | 1 | 2.5 | 0.57 | 1.47 | 18 |
| Sulfur | 4 | 1.8 | 2.12 | 3.89 | 188 |
| Triphenyltin hydrox. | 18 | 2.1 | 0.14 | 0.29 | 58 |
| Other Chemicals: | | | | | |
| Dichloropropene | 5 | 1.0 | 171.99 | 173.45 | 10,425 |
| Diquat | 38 | 1.3 | 0.34 | 0.48 | 202 |
| Endothall | 3 | 1.0 | 0.79 | 0.86 | 23 |
| Maleic hydrazide | 6 | 1.0 | 0.97 | 0.98 | 62 |
| Metam-sodium | 22 | 1.0 | 121.43 | 121.98 | 29,327 |
| Paraquat | 1 | 1.0 | 0.32 | 0.32 | 5 |
| Sulfuric acid | 18 | 1.0 | 281.06 | 293.09 | 58,893 |

** Area applied is less than one percent.*
*** Total applied is less than 1,000 lbs.*
*1/ Planted acres in 1999 for the 11 states surveyed were 1.11 million acres. States included are CO, ID, IN, ME, MI, MN, ND, OR, PA, WA and WI.*
*2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.*

**Fall Potatoes: Pesticide Use, Total Acreage, Percent of Area Receiving Applications and Total Applied, Eleven States Surveyed and Total, 1999**

| State | Planted Acreage | Herbicide | | Insecticide 1/ | | Fungicide | | Other Chemical | |
|---|---|---|---|---|---|---|---|---|---|
| | 1,000 Acres | Percent | 1,000 Lbs | Percent | 1,000 Lbs | Percent | 1,000 Lbs | Percent | 1,000 Lbs |
| CO | 77.2 | 86 | 175 | 76 | 39 | 98 | 387 | 57 | 14,056 |
| ID | 395 | 92 | 953 | 92 | 1,066 | 92 | 1,502 | 56 | 53,358 |
| IN 2/ | 5.2 | 67 | 9 | 99 | 2 | 29 | 10 | | |
| ME | 65 | 100 | 25 | 97 | 29 | 100 | 553 | 24 | 89 |
| MI | 48 | 100 | 101 | 100 | 52 | 99 | 609 | 56 | 137 |
| MN | 70 | 86 | 82 | 91 | 54 | 93 | 577 | 16 | 2,103 |
| ND | 121 | 83 | 94 | 95 | 121 | 99 | 966 | 5 | 1,315 |
| OR | 56 | 100 | 129 | 89 | 183 | 97 | 314 | 65 | 7,489 |
| PA | 14.5 | 94 | 35 | 99 | 47 | 95 | 125 | 3 | 4 |
| WA | 170 | 98 | 360 | 99 | 810 | 97 | 1,206 | 75 | 19,377 |
| WI | 86 | 98 | 84 | 100 | 193 | 98 | 921 | 16 | 1,104 |
| Total | 1,107.9 | 93 | 2,047 | 93 | 2,596 | 95 | 7,170 | 45 | 99,032 |

*1/ Total Applied excludes Bt's (Bacillus thuringiensis). Total BT quantities are not available because amounts of active ingredient are not comparable between products.*
*2/ Insufficient reports to publish data for one or more of the pesticide classes.*

**Fall Potatoes: Agricultural Chemical Applications, Maine, 1999 1/**

| Agricultural Chemical | Area Applied | Applications | Rate per Application | Rate per Crop Year | Total Applied |
|---|---|---|---|---|---|
| | Percent | Number | Pounds per Acre | | 1,000 lbs |
| Herbicides: | | | | | |
| Linuron | 8 | 1.0 | 0.51 | 0.53 | 3 |
| Metribuzin | 82 | 1.0 | 0.40 | 0.41 | 22 |
| Rimsulfuron | 8 | 1.1 | 0.02 | 0.02 | ** |
| Insecticides: | | | | | |
| Azinphos-methyl | 3 | 1.3 | 0.29 | 0.40 | 1 |
| Bt (Bacillus thur.)2/ | * | 3.3 | | | |
| Carbaryl | 1 | 2.7 | 0.77 | 2.10 | 2 |
| Disulfoton | 6 | 1.4 | 0.62 | 0.91 | 3 |
| Endosulfan | 4 | 1.1 | 0.59 | 0.67 | 2 |
| Esfenvalerate | 8 | 1.5 | 0.03 | 0.05 | ** |
| Imidacloprid | 90 | 1.3 | 0.09 | 0.12 | 7 |
| Methamidophos | 19 | 1.7 | 0.61 | 1.08 | 13 |
| Permethrin | 8 | 1.5 | 0.10 | 0.16 | 1 |
| Fungicides: | | | | | |
| Chlorothalonil | 72 | 7.3 | 0.62 | 4.50 | 212 |
| Copper hydroxide | 30 | 2.1 | 0.37 | 0.80 | 16 |
| Cymoxanil | 3 | 2.7 | 0.12 | 0.32 | 1 |
| Mancozeb | 77 | 6.0 | 0.97 | 5.87 | 293 |
| Maneb | 5 | 6.4 | 0.95 | 6.14 | 18 |
| Mefenoxam | 19 | 1.9 | 0.12 | 0.23 | 3 |
| Metalaxyl | 4 | 2.1 | 0.20 | 0.41 | 1 |
| Metiram | 2 | 3.6 | 1.21 | 4.46 | 5 |
| Triphenyltin hydrox. | 26 | 2.2 | 0.12 | 0.26 | 4 |
| Other Chemicals: | | | | | |
| Diquat | 93 | 1.7 | 0.25 | 0.43 | 26 |
| Endothall | 3 | 1.0 | 0.48 | 0.48 | 1 |
| Maleic hydrazide | 16 | 1.0 | 1.29 | 1.29 | 14 |

** Area applied is less than one percent.*
*** Total applied is less than 1,000 lbs.*
*1/ Planted acres in 1999 for Maine were 65,000 acres.*
*2/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.*

**Listed below are persons within the National Agricultural Statistics Service to contact for additional information.**

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